

(12) UK Patent Application (19) GB (11) 2 270 053 (13) A

(43) Date of A Publication 02.03.1994

(21) Application No 9212960.0

(22) Date of Filing 18.06.1992

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(51) INT CL⁵
B60L 8/00, B60K 1/00

(52) UK CL (Edition M)
B7H HA HDB H626 H713 H714 H741

(56) Documents Cited
GB 2249529 A US 5039930 A US 4871042 A
US 4516647 A

(58) Field of Search
UK CL (Edition L) B7H HDB
INT CL⁵ B60K 1/00 16/00, B60L 8/00 11/18, B62M
23/02 H02J 7/34
Online database: WPI

(54) Battery-powered bicycle.

(57) The bicycle, or other light weight vehicle, has a removable battery cassette which is rechargeable from a solar panel 2 or a domestic mains charger 3 controlled by a timer 4. A fully-charged sensor 6 may be provided. The battery cassette 1 is suitable for use with a vending machine system for the supply of exchange recharged batteries. The bicycle may be foldable and may be powered while folded, for ease of handling.

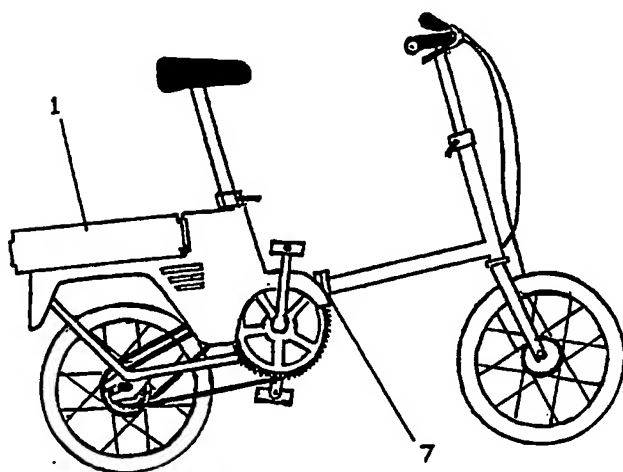


FIG 1

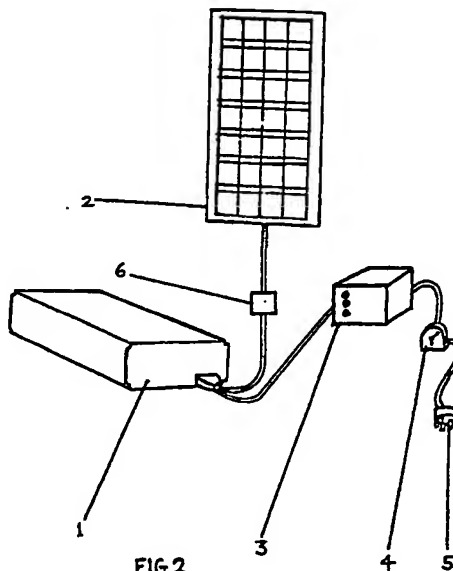


FIG 2

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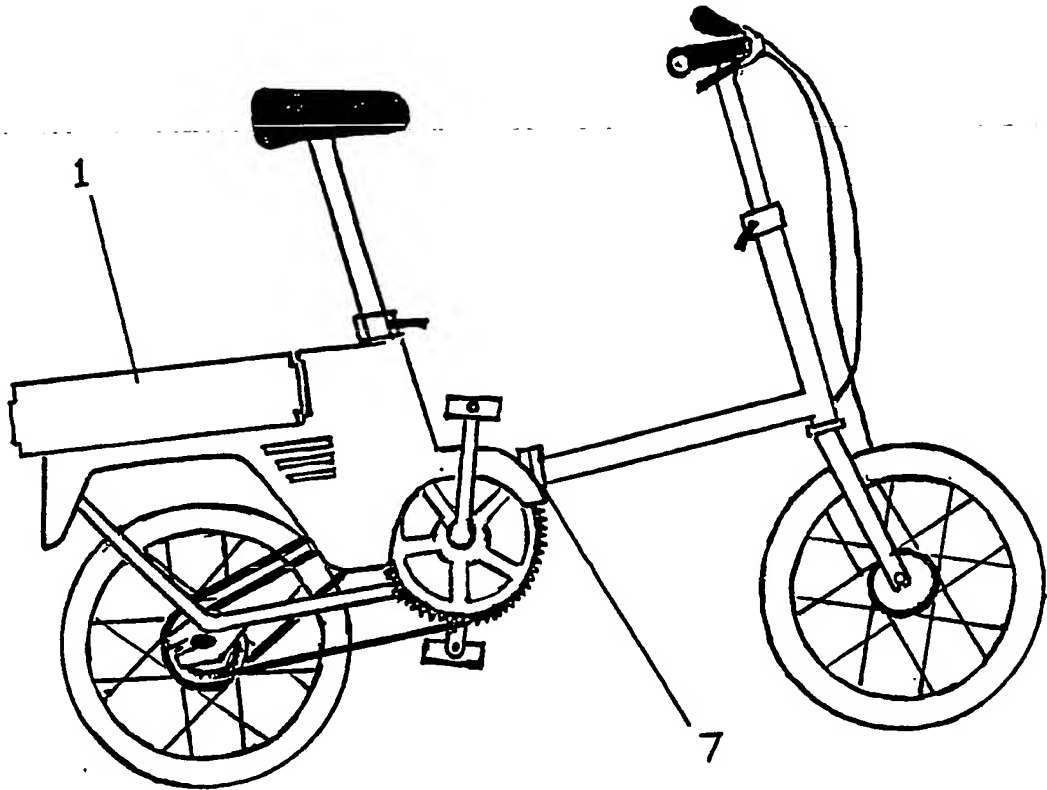
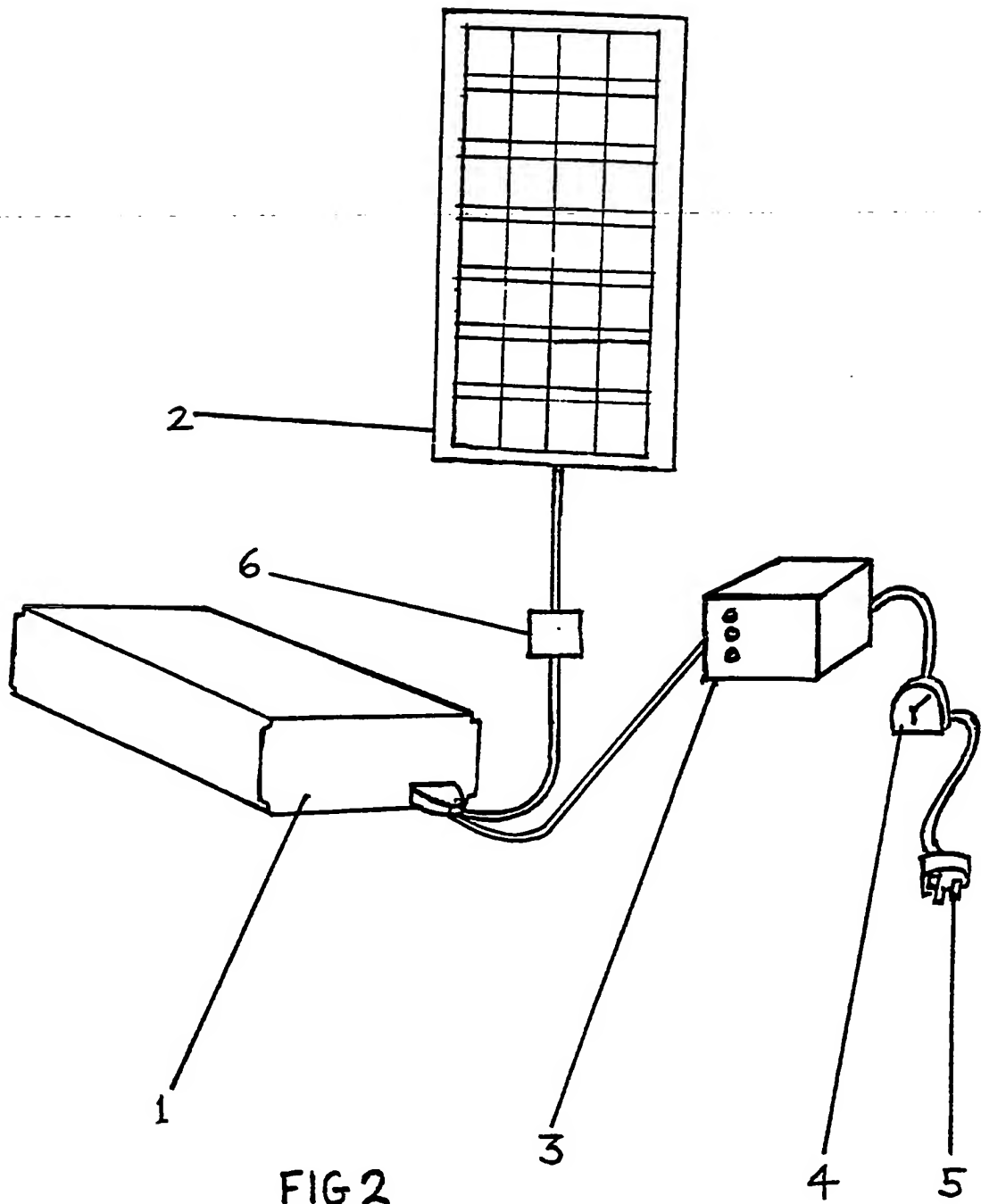


FIG 1



ELECTRIC BICYCLE AND POWER SYSTEM FOR LIGHTWEIGHT VEHICLES

Invention 1):

A battery powered cycle, or lightweight wheeled vehicle, with removable battery cassette so designed as to work in conjunction with a solar panel for recharging during daylight, backed up with a conventional mains charging system with a timer and fully charged sensor control to ensure a full recharge in a pre-determined time period, without any unnecessary use of mains electricity.

Invention 2):

A battery powered cycle, or lightweight wheeled vehicle, with removable battery cassette, suitable for use with a vending machine system, that can supply an exchange recharged battery cassette, which may optionally be recharged by solar power; with mains electricity backup.

Invention 3):

A folding bicycle, with removable battery cassette, so designed to allow the cycle to be easily wheeled, and optionally be carried with separate weight in each hand; of the cycle and separate battery cassette: with the option of using the battery in situ to power the wheels to allow ease of handling whilst folded.

Fig. 1 shows the battery powered cycle with removable battery cassette.

Fig. 2 shows the battery recharging system.

Key to reference numerals:

1. Removable battery cassette
2. Solar panel
3. Mains charger with fully charged sensor
4. Timer controlling mains charger
5. Plug connecting mains electricity source
6. Optional fully charged sensor
7. Fold; allows bike to fold axle to axle; to allow handlebars to be turned sideways to be used as handle for "trolleying".

CLAIMS

- 1) A battery powered cycle, or lightweight wheeled vehicle, with removable battery cassette so designed as to work in conjunction with a solar panel for recharging during daylight, backed up with a conventional mains charging system with a timer and fully charged sensor control to ensure a full recharge in a pre-determined time period, without any unnecessary use of mains electricity.
- 2) A battery powered cycle, or lightweight wheeled vehicle, with removable battery cassette, suitable for use with a vending machine system, that can supply an exchange recharged battery cassette, which may optionally be recharged by solar power; with mains electricity backup.
- 3) A folding bicycle, with removable battery cassette, so designed to allow the cycle to be easily wheeled, and optionally be carried with separate weight in each hand; of the cycle and separate battery cassette: with the option of using the battery in situ to power the wheels to allow ease of handling whilst folded.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

GB 9212960.0

Relevant Technical fields

(i) UK CI (Edition L) B7H (HDB)

(ii) Int CI (Edition 5) B60L 8/00,11/18; B62M 23/02;
H02J 7/34; B60K 1/00,16/00

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASE: WPI

Search Examiner

J L TWIN

Date of Search

21 JULY 1993

Documents considered relevant following a search in respect of claims 1

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
	GB 2249529 (HSU et al)	1
	US 5039930 (COLLIER et al)	1
	US 4871042 (HSU et al) - see eg column 3, lines 24-45	1
	US 4516647 (NOVAK)	1

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

